MS-7174 (v1.X M-ATX Mainboard)

Manual Rev: 1.0
Release Date: April. 2005

CE N1996

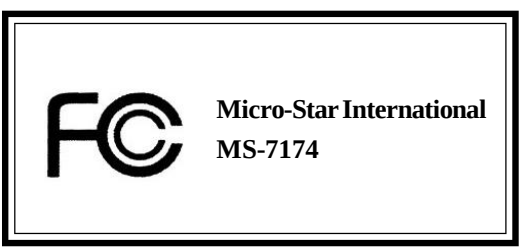
FCC-B Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Notice 1
The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2
Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation

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Revision History

Revision	Revision History	Date
V1.0	First release for PCB 1.X with Intel 915GE & ICH6	April 2005

Technical Support

If a problem arises with your system and no solution can be obtained from the user's manual, please contact your place of purchase or local distributor. Alternatively, please try the following help resources for further guidance.

† Visit the MSI homepage & FAQ site for technical guide, BIOS updates, driver updates, and other information: **http://www.msi.com.tw** & **http://www.msi.com.tw/program/service/faq/faq/esc_faq_list.php**

† Contact our technical staff at: **support@msi.com.tw**

Safety Instructions

1. Always read the safety instructions carefully.
2. Keep this User's Manual for future reference.
3. Keep this equipment away from humidity.
4. Lay this equipment on a reliable flat surface before setting it up.
5. The openings on the enclosure are for air convection hence protects the equipment from overheating. **Do not cover the openings.**
6. Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.
7. Place the power cord such a way that people can not step on it. Do not place anything over the power cord.
8. Always Unplug the Power Cord before inserting any add-on card or module.
9. All cautions and warnings on the equipment should be noted.
10. Never pour any liquid into the opening that could damage or cause electrical shock.
11. If any of the following situations arises, get the equipment checked by a service personnel:
    - † The power cord or plug is damaged.
    - † Liquid has penetrated into the equipment.
    - † The equipment has been exposed to moisture.
    - † The equipment has not work well or you can not get it work according to User's Manual.
    - † The equipment has dropped and damaged.
    - † The equipment has obvious sign of breakage.
12. **Do not leave this equipment in an environment unconditioned, storage temperature above 60^0 C (140^{0}F), it may damage the equipment.**

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

廢電池請回收

For better environmental protection, waste batteries should be collected separately for recycling or special disposal.

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Getting Started

Thank you for choosing the MS-7174 v1.x Micro ATX mainboard. The mainboard is based on **Intel® 910GE** and **Intel® ICH6** chipset for optimal system efficiency. Designed to fit the advanced **Intel® Pentium 4 Prescott LGA775** processor, the MS-7142 mainboard delivers a high performance and professional desktop platform solution.

Mainboard Specifications

CPU

† Supports Intel® Pentium 4/ Celeron D Prescott LGA775 processors in LGA775 package.
† Supports 2005 Mainstream FMB CPU VR Design.
† Supports 4 pin CPU Fan Pin-Header with Fan Speed Control.
† Supports up to Pentium 4 3XX, 5XX.
(For the latest information about CPU, please visit http://www.msi.com.tw/program/products/mainboard/mbd/pro_mbd_cpu_support.php)

Chipset

† Intel® 910GE chipset
- Supports FSB 533MHz.
- Supports PCI Express x16 interface.
- Supports DDR2 400/533 memory interface.
- Integrated graphics controller.

† Intel® ICH6 chipset
- Hi-Speed USB (USB2.0) controller, 480Mb/sec, up to 8 ports.
- Supports up to 4 Serial ATA ports .
- 1 channel Ultra ATA 100 bus Master IDE controller.
- PCI Master v2.3, I/O APIC.
- ACPI 2.0 Compliant.

Main Memory

† Supports two unbuffered DIMM of 1.8 Volt DDR2 SDRAM
† Supports up to 2GB memory size.
† Supports Dual channel DDR2 memory architecture.
† Supports DDR2 400/533 memory interface.
(For the updated supporting memory modules, please visit http://www.msi.com.tw/program/products/mainboard/mbd/pro_mbd_trp_list.php.)

Slots

† One PCI Express x16 slot (supports PCI Express Bus specification v1.0a compliant)
† Three 32-bit v2.3 Master PCI bus slots (support 3.3v/5v PCI bus interface).

On-Board IDE

† One Ultra DMA 33/66/100 IDE controllers integrated in ICH6.
- Supports PIO, Bus Master operation modes.
- Can connect up to Two Ultra ATA drives.

† Serial ATA controller integrated in ICH6.
- Up to 150MB/sec transfer speed.
- Can connect up to four Serial ATA devices.

On-Board Peripherals

† On-Board Peripherals include:
- 1 floppy port supports 1 FDD with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes
- 2 SPDIF ports
- 1 VGA port
- 1 parallel port supports SPP/EPP/ECP mode
- 1 Line-In / Line-Out / MIC-In / Rear Speaker Out / Center-Subwoofer Speaker Out/ Side Surround Out
- 8 USB ports (Rear * 6/ Front * 2)
- 1 RJ-45 LAN jack

LAN

† Intel 82562GT 10/100 Ethernet PHY
- Supports 10/ 100 Mb/s .
- Compliane with PCI 2.2.
- Supports ACPI Power Management.

1394 (optional)

† Supports two IEEE1394 onboard pinheader. Transfer rate is up to 400 Mbps.
† Controlled by VIA VT6307 chipset.

Audio

† High Definition link controller integrated in Intel® ICH6R/ICH6 chip.
† 8-channel audio codec Realtek ALC880.
- Compliant with Azalia 1.0 Spec.

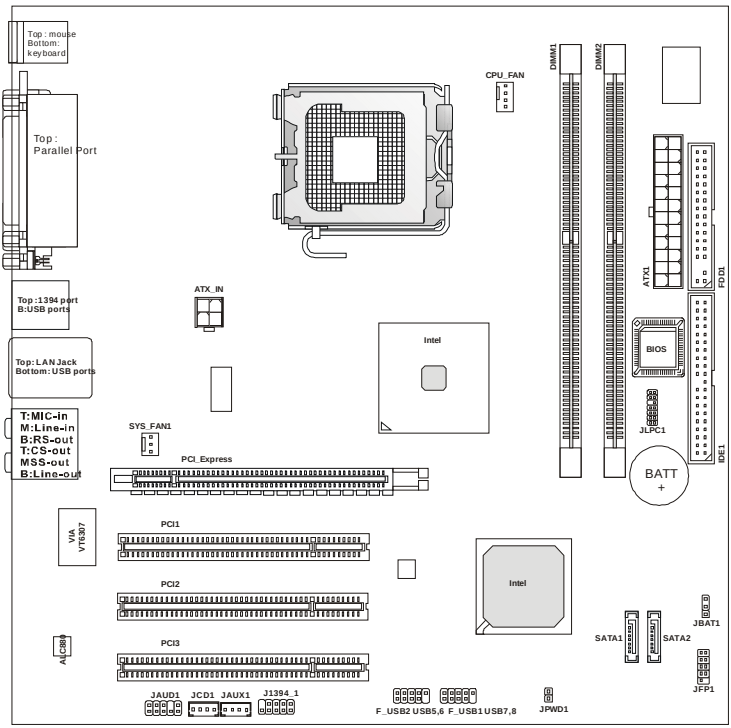
BIOS

† The mainboard BIOS provides “Plug & Play” BIOS which detects the peripheral devices and expansion cards of the board automatically.
† The mainboard provides a Desktop Management Interface (DMI) function which records your mainboard specifications.

Mounting and Dimension

† M-ATX Form Factor: 9.6 inch (W) x 9.6 inch (L)
† 8 mounting holes

Mainboard Layout



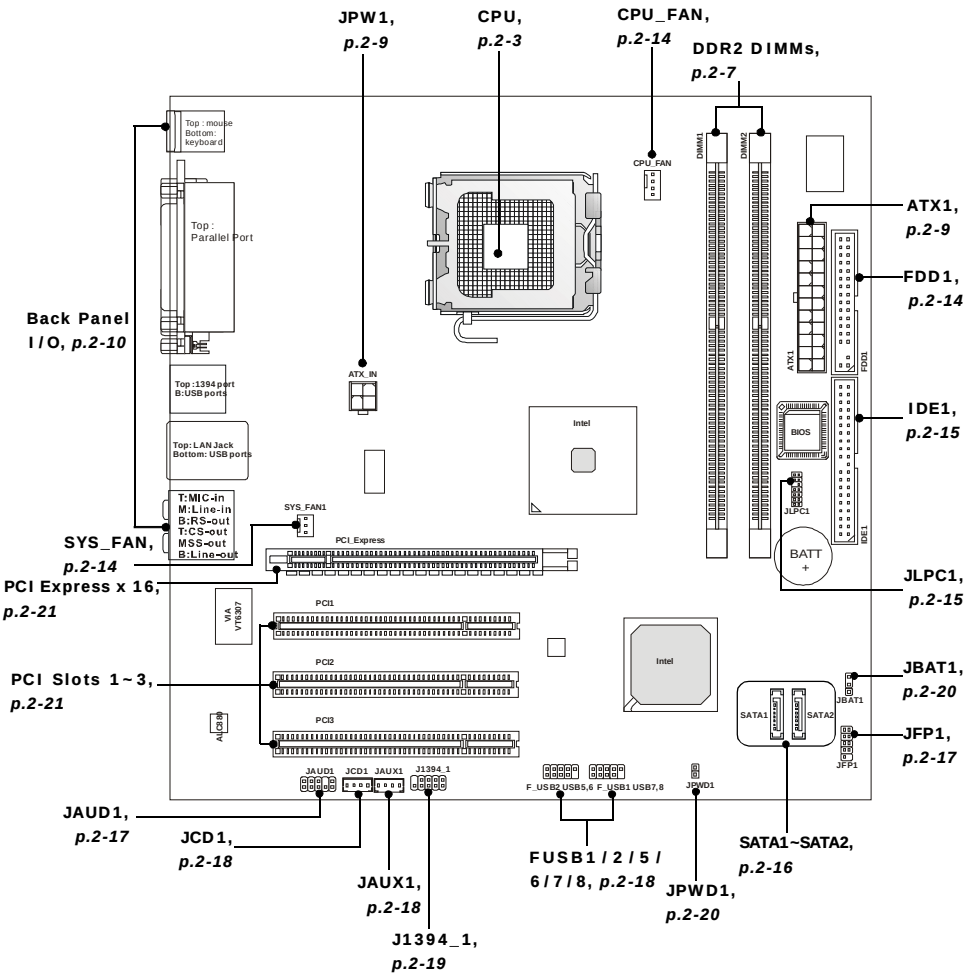
MS-7174 v1.x M-ATX Mainboard

Hardware Setup

This chapter tells you how to install the CPU, memory modules, and expansion cards, as well as how to setup the jumpers on the mainboard. Also, it provides the instructions on connecting the peripheral devices, such as the mouse, keyboard, etc.

While doing the installation, be careful in holding the components and follow the installation procedures.

Quick Components Guide



Central Processing Unit: CPU

The mainboard supports Intel® Pentium 4 Prescott processor. The mainboard uses a CPU socket called LGA775. When you are installing the CPU, **make sure to install the cooler to prevent overheating.** If you do not have the CPU cooler, contact your dealer to purchase and install them before turning on the computer.

For the latest information about CPU, please visit http://www.msi.com.tw/program/products/mainboard/mbd/pro_mbd_cpu_support.php.

MSI Reminds You...

Overheating

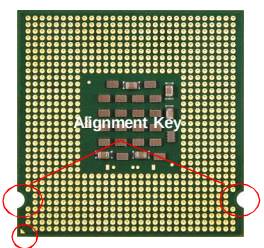
Overheating will seriously damage the CPU and system, always make sure the cooling fan can work properly to protect the CPU from overheating.

Replacing the CPU

While replacing the CPU, always unplug the power supply's power cord from grounded outlet first to ensure the safety of CPU.

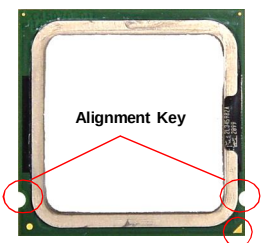
Introduction to LGA 775 CPU

The pin-pad side of LGA 775 CPU.



Yellow triangle is the Pin 1 indicator

The surface of LGA 775 CPU. Remember to apply some silicone heat transfer compound on it for better heat dispersion.



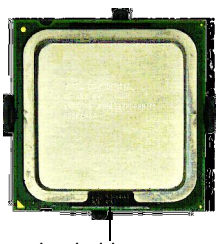
Yellow triangle is the Pin 1 indicator

CPU & Cooler Installation

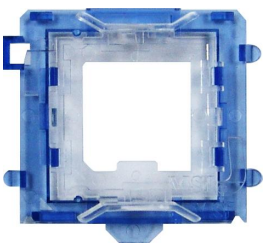
When you are installing the CPU, **make sure the CPU has a cooler attached on the top to prevent overheating.** If you do not have the cooler, contact your dealer to purchase and install them before turning on the computer. Meanwhile, do not forget to apply some silicon heat transfer compound on CPU before installing the heat sink/cooler fan for better heat dispersion.

Follow the steps below to install the CPU & cooler correctly. Wrong installation will cause the damage of your CPU & mainboard.

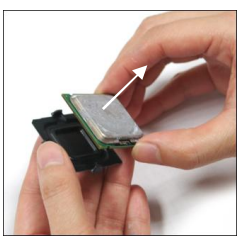
1. The CPU has a land side cover on the bottom to protect the CPU contact from damage. Rotate it to make the pin 1 indicator (yellow triangle) in the right-bottom corner.



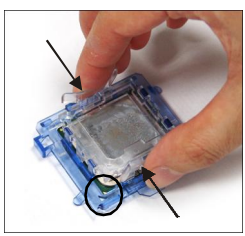
2. Take out the accompanying CPU Clip and rotate it for the same direction as the CPU (Pin 1 indicator is in the left-bottom corner).



3. Use 2 hands to remove the land side cover (if any). Please note not to touch the pins.



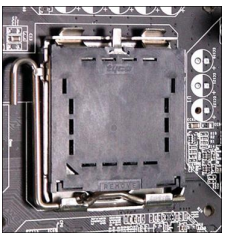
4. Align the two pin 1 indicators (the triangles on the CPU & the CPU Clip), and use the CPU Clip to clip the CPU up, pressing the clips on both sides to the center, as the arrows shown.



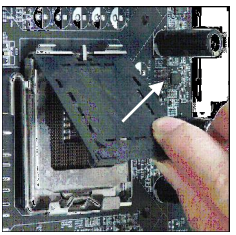
MSI Reminds You...

1. *Confirm if your CPU cooler is firmly installed before turning on your system.*
2. *Do not touch the CPU socket pins to avoid damaging.*
3. *The availability of the CPU land side cover depends on your CPU packing.*

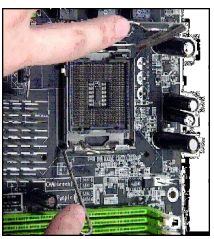
5. The CPU has a plastic cap on it to protect the contact from damage. Before you have installed the CPU, always cover it to protect the socket pin.



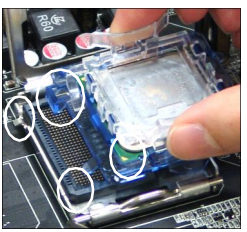
6. Remove the cap from lever hinge side (as the arrow shows). The pins of socket reveal.



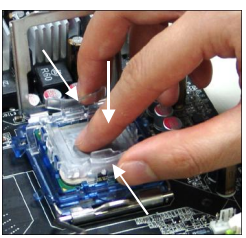
7. Lift the load lever up and open the load plate.



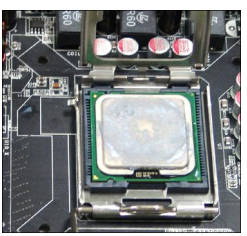
8. Correctly align the triangle of CPU Clip with the CPU chamfer, and the square on the CPU Clip to the hook of the socket.



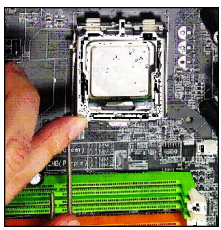
9. Use your thumb and the middle fingers to push the clips to release the CPU, then press down the CPU with your index finger to allow the whole module to be installed onto the CPU socket.



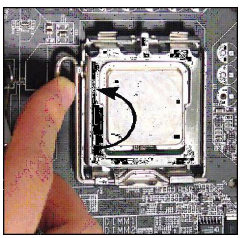
10. The CPU is installed well on the CPU socket.



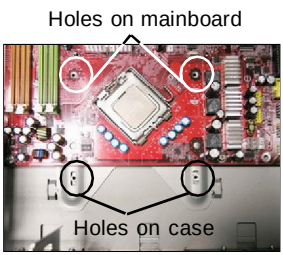
11. Visually inspect if the CPU is seated well into the socket, then remove the CPU Clip with 2 fingers. Then cover the load plate onto the package.



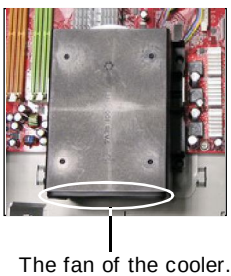
12. Press down the load lever lightly onto the load plate, and then secure the lever with the hook under retention tab.



13. Position the mainboard into the chassis and use the retaining screws to secure it into the place. Then align the holes on the mainboard and chassis with the cooler.



14. Put down the cooler and use the retaining screws of the cooler to secure it into the place. Make sure the cooler is in the proper orientation, the cooler will only fit in the right orientation. (Please refer the pictures below.)



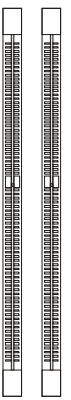
MSI Reminds You...

1. *Check the information in **PC Health Status** of **H/W Monitor** in BIOS (Chapter 3) for the CPU temperature.*
2. *Whenever CPU is not installed, always protect your CPU socket pin with the plastic cap covered (shown in Figure 1) to avoid damaging.*
3. *Please note that the mating/unmating durability of the CPU is 20 cycles. Therefore we suggest you do not plug/unplug the CPU too often.*

Memory

The mainboard provides two 240-pin unbuffered DDR266/DDR333/DDR400 DDR SDRAM, and supports the memory size up to 2GB without ECC. To operate properly, at least one DIMM module must be installed.

(For the updated supporting memory modules, please visit http://www.msi.com.tw/program/products/mainboard/mbd/pro_mbd_trp_list.php)



DDR DIMM Slots
(DDR 1~2)

Introduction to DDR SDRAM

DDR (Double Data Rate) SDRAM is similar to conventional SDRAM, but doubles the rate by transferring data twice per cycle. It uses 2.5 volts as opposed to 3.3 volts used in SDR SDRAM, and requires 184-pin DIMM modules rather than 168-pin DIMM modules used by SDR SDRAM.

DDR Module Combination

Install at least one DIMM module on the slots. Memory modules can be installed on the slots in any order. You can install either single- or double-sided modules to meet your own needs.

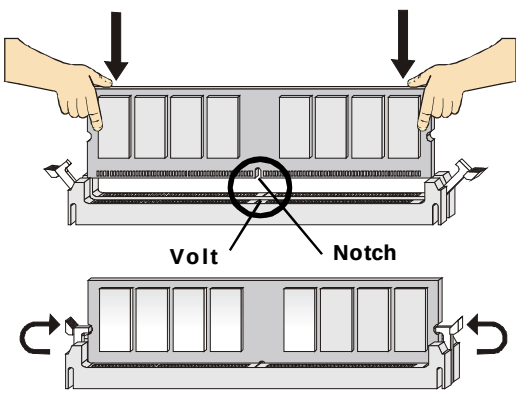
Memory modules can be installed in any combination as follows:

Slot	Memory Module	Total Memory
DDR 1 (Bank 0 & 1)	S/D	64MB~1GB
DDR 2 (Bank 2 & 3)	S/D	64MB~1GB
Maximum System Memory Supported		64MB~2GB

S: Single Side D: Double Side

Installing DDR Modules

1. The DDR DIMM has only one notch on the center of module. The module will only fit in the right orientation.
2. Insert the DIMM memory module vertically into the DIMM slot. Then push it in until the golden finger on the memory module is deeply inserted in the socket.
3. The plastic clip at each side of the DIMM slot will automatically close.



MSI Reminds You...

You can barely see the golden finger if the module is properly inserted in the socket.

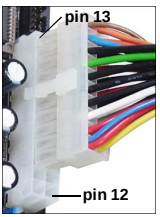
Power Supply

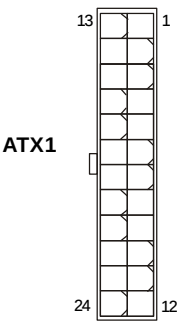
The mainboard supports ATX power supply for the power system. Before inserting the power supply connector, always make sure that all components are installed properly to ensure that no damage will be caused.

ATX 24-Pin Power Connector: ATX1

This connector allows you to connect an ATX 24-pin power supply. To connect the ATX 24-pin power supply, make sure the plug of the power supply is inserted in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.

You may use the 20-pin ATX power supply as you like. If you'd like to use the 20-pin ATX power supply, please plug your power supply along with pin 1 & pin 13 (refer to the image at the right hand). There is also a foolproof design on pin 11, 12, 23 & 24 to avoid wrong installation.



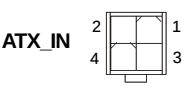


Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS-ON#
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	PWROK	20	Res
9	5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	GND

ATX 12V Power Connector: ATX_IN

This 12V power connector is used to provide power to the CPU.



Pin Definition

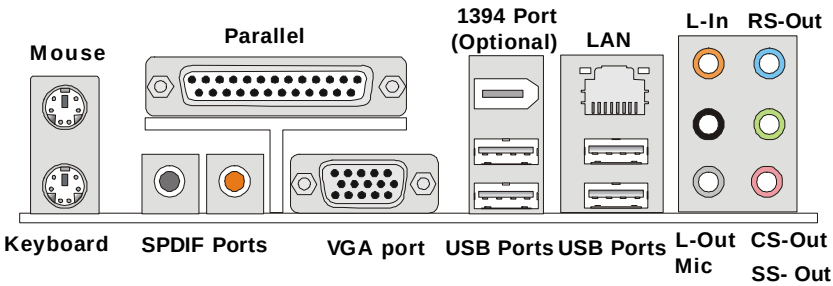
PIN	SIGNAL
1	GND
2	GND
3	12V
4	12V

MSI Reminds You...

1. *These two connectors connect to the ATX power supply and have to work together to ensure stable operation of the mainboard.*
2. *Power supply of 350 watts (and above) is highly recommended for system stability.*
3. *ATX 12V power connection should be greater than 18A.*

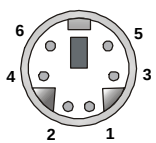
Back Panel

The back panel provides the following connectors:



Mouse/Keyboard Connector

The mainboard provides a standard PS/2® mouse/keyboard mini DIN connector for attaching a PS/2® mouse/keyboard. You can plug a PS/2® mouse/keyboard directly into this connector. The connector location and pin assignments are as follows:



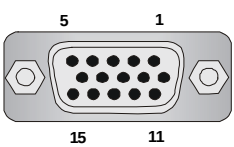
PS/2 Mouse / Keyboard (6-pin Female)

Pin Definition

PIN	SIGNAL	DESCRIPTION
1	Mouse/Keyboard Data	Mouse/Keyboard data
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Mouse/Keyboard Clock	Mouse/Keyboard clock
6	NC	No connection

VGA Connector

The mainboard provides a DB 15-pin female connector to connect a VGA monitor.

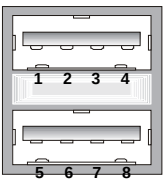


VGA Connector
(DB 15-pin)

Pin	Signal Description	Pin	Signal Description
1	RED	2	GREEN
3	BLUE	4	N/C
5	GND	6	GND
7	GND	8	GND
9	+5V	10	GND
11	N/C	12	SDA
13	Horizontal Sync	14	Vertical Sync
15	SCL		

USB Connectors

The mainboard provides an OHCI (Open Host Controller Interface) Universal Serial Bus root for attaching USB devices such as keyboard, mouse or other USB-compatible devices. You can plug the USB device directly into the connector.



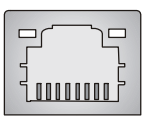
USB Ports

USB Port Description

PIN	SIGNAL	DESCRIPTION
1	VCC	+5V
2	-Data 0	Negative Data Channel 0
3	+Data0	Positive Data Channel 0
4	GND	Ground
5	VCC	+5V
6	-Data 1	Negative Data Channel 1
7	+Data 1	Positive Data Channel 1
8	GND	Ground

LAN (RJ-45) Jack

The mainboard provides 1 standard RJ-45 jack for connection to single Local Area Network (LAN). This LAN enables data to be transferred at 1000Mbps (for RTL8110S onlly), 100Mbps or 10Mbps. You can connect a network cable to it.



RJ-45 LAN Jack

Pin Definition

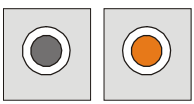
PIN	SIGNAL (Gb/ Mb)	Description for Gb LAN	Description for 10/ 100 Mb LAN
1	D0P/ TDP	Differential Pair 0+	Transmit Differential Pair
2	D0N/ TDN	Differential Pair 0-	Transmit Differential Pair
3	D1P/ RDP	Differential Pair 1+	Receive Differential Pair
4	D2P/ NC	Differential Pair 2+	Not Used
5	D2N/ NC	Differential Pair 2-	Not Used
6	D1N/ RDN	Differential Pair 1-	Receive Differential Pair
7	D3P/ NC	Differential Pair 3+	Not Used
8	D3N/ NC	Differential Pair 3-	Not Used

Audio Port Connectors

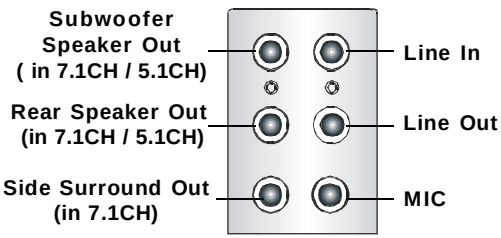
The left 3 audio jacks are for 2-channel mode for stereo speaker output: **Line Out** is a connector for Speakers or Headphones. **Line In** is used for external CD player, Tape player, or other audio devices. **Mic** is a connector for microphones.

However, there is an advanced audio application provided by Realtek ALC880 to offer support for **7.1-channel audio operation** and can turn rear audio connectors from 2-channel to 4-/5.1-/7.1- channel audio.

The mainboard also offers two SPDIF in/out connectors for stereo speaker input/output. These connectors are used to connect SPDIF (Sony & Philips Digital Interconnect Format) interface for digital audio transmission.



SPDIF in **SPDIF out**

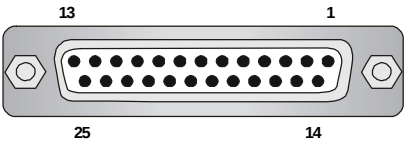


MSI Reminds You...

*For the advanced functions of the audio codec, please refer to **Chapter 6: Introduction to Realtek ALC880 Audio Codec** for details.*

Parallel Port Connector: LPT1

The mainboard provides a 25-pin female centronic connector as LPT. A parallel port is a standard printer port that supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP) mode.



Pin Definition

PIN	SIGNAL	DESCRIPTION
1	STROBE	Strobe
2	DATA0	Data0
3	DATA1	Data1
4	DATA2	Data2
5	DATA3	Data3
6	DATA4	Data4
7	DATA5	Data5
8	DATA6	Data6
9	DATA7	Data7
10	ACK#	Acknowledge
11	BUSY	Busy
12	PE	PaperEnd
13	SELECT	Select
14	AUTO FEED#	AutomaticFeed
15	ERR#	Error
16	INIT#	Initialize Printer
17	SLIN#	Select In
18	GND	Ground
19	GND	Ground
20	GND	Ground
21	GND	Ground
22	GND	Ground
23	GND	Ground
24	GND	Ground
25	GND	Ground

Connectors

The mainboard provides connectors to connect to FDD, IDE HDD, case, LAN, and USB Ports.

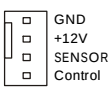
Floppy Disk Drive Connector: FDD1

The mainboard provides a standard floppy disk drive connector that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types.

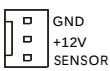
FDD1

Fan Power Connectors: CPU_FAN/ SYS_FAN1

The CPU_FAN1 (processor fan) and SYS_FAN1 support system cooling fan with +12V. When connecting the wire to the connectors, always take note that the red wire is the positive and should be connected to the +12V, the black wire is Ground and should be connected to GND. If the mainboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.



CPU_FAN



SYS_FAN1

MSI Reminds You...

1. *Always consult the vendors for proper CPU cooling fan.*
2. *CPU_FAN supports the fan control.*
3. *Please refer to the recommended CPU fans at Intel® official website.*

Hard Disk Connector: IDE1

The mainboard has one 32-bit Ultra DMA 66/100 IDE controller integrated in the SourthBridge ICH6R/ICH6, which supports PIO & Bus Master operation modes and it can connect up to two Ultra ATA drives.

IDE1 (blue)

IDE1 (Primary IDE Connector)

IDE1 can connect a Master and a Slave drive. You must configure second hard drive to Slave mode by setting the jumper accordingly.

MSI Reminds You...

If you install two hard disks on cable, you must configure the second drive to Slave mode by setting its jumper. Refer to the hard disk documentation supplied by hard disk vendors for jumper setting instructions.

FWH/LPC Debugging Pin Header: JLPC1

The pin header is for internal debugging only.

JLPC1

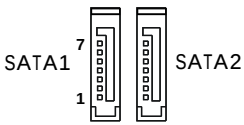
Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	LCLK	2	Key (no pin)
3	LRST#	4	VCC3
5	LAD0	6	FID0_LRST
7	LAD1	8	VCC5
9	LAD2	10	Key (no pin)
11	LAD3	12	GND
13	LFRAME#	14	GND

Serial ATA Connectors controlled by Intel ICH6 SATA1~SATA2

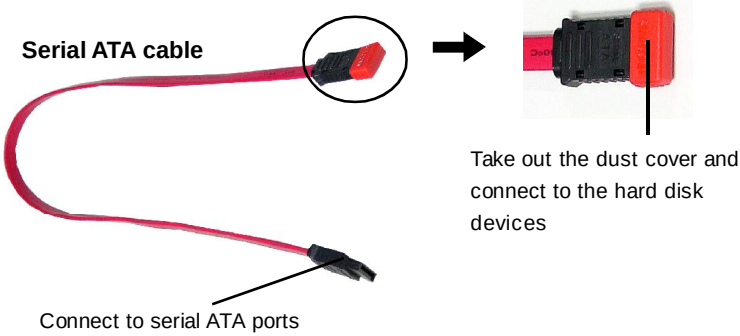
The Southbridge of this mainboard is ICH6 which supports two serial connectors SATA1 & SATA2.

SATA1 & SATA2 are dual high-speed Serial ATA interface ports. Each supports 1st generation serial ATA data rates of 150 MB/s. Both connectors are fully compliant with Serial ATA 1.0 specifications. Each Serial ATA connector can connect to 1 hard disk device.



Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	GND	2	TXP
3	TXN	4	GND
5	RXN	6	RXP
7	GND		

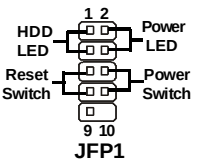


MSI Reminds You...

Please do not fold the serial ATA cable in a 90-degree angle, since this might cause the loss of data during the transmission.

Front Panel Connectors: JFP1

The mainboard provides one front panel connector for electrical connection to the front panel switches and LEDs. JFP1 is compliant with Intel® Front Panel I/O Connectivity Design Guide.

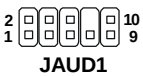


JFP1 Pin Definition

PIN	SIGNAL	DESCRIPTION
1	HD_LED_P	Hard disk LED pull-up
2	FP PWR/SLP	MSG LED pull-up
3	HD_LED_N	Hard disk active LED
4	FP PWR/SLP	MSG LED pull-up
5	RST_SW_N	Reset Switch low reference pull-down to GND
6	PWR_SW_P	Power Switch high reference pull-up
7	RST_SW_P	Reset Switch high reference pull-up
8	PWR_SW_N	Power Switch low reference pull-down to GND
9	RSVD_DNU	Reserved. Do not use.

Front Panel Audio Connector: JAUD1

The JAUD1 front panel audio connector allows you to connect to the front panel audio and is compliant with Intel® Front Panel I/O Connectivity Design Guide.

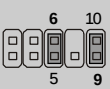


Pin Definition

PIN	SIGNAL	DESCRIPTION
1	PORT 1L	Analog Port 1 - left channel
2	AUD_GND	Ground used by analog audio circuits
3	PORT 1R	Analog Port1 - right channel
4	PRESENCE#	Active low signal that signals BIOS that an Azalia dongle is connected to the analog header. PRESENCE# = 0 when an Azalia dongle is connected.
5	PORT 2R	Analog Port2 - right channel
6	SENSE1_RETURN	Jack detection return for front panel JACK1
7	SENSE_SEND	Jack detection sense line fro the Azalia CODEC jack detection resistor network.
8	KEY	No pin
9	PORT 2L	Analog Port2 - left channel
10	SENSE2_RETURN	Jack detection return for front panel JACK2

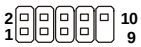
MSI Reminds You...

If you don't want to connect to the front audio header, pins 5 & 6, 9 & 10 have to be jumpered in order to have signal output directed to the rear audio ports. Otherwise, the Line-Out connector on the back panel will not function.



Front USB Connectors: F_USB1/2 (USB5/6/7/8)

The mainboard provides two standard USB 2.0 pin headers F_USB1. USB 2.0 technology increases data transfer rate up to a maximum throughput of 480Mbps, which is 40 times faster than USB 1.1, and is ideal for connecting high-speed USB interface peripherals such as **USB HDD**, **digital cameras**, **MP3 players**, **printers**, **modems and the like**.



(USB 2.0/standard spec)

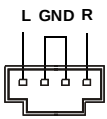
Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	VCC	2	VCC
3	USB0-	4	USB1-
5	USB0+	6	USB1+
7	GND	8	GND
9	Key	10	NC

MSI Reminds You...
Note that the pins of VCC and GND must be connected correctly, or it may cause some damage.

Aux Line-In Connector: JAUX1

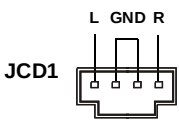
The connector is for DVD add-on card with Line-in connector.



AUX_IN1

CD-In Connector: JCD1

The connector is for CD-ROM audio connector.



IEEE 1394 Connector: J1394_1 (Optional)

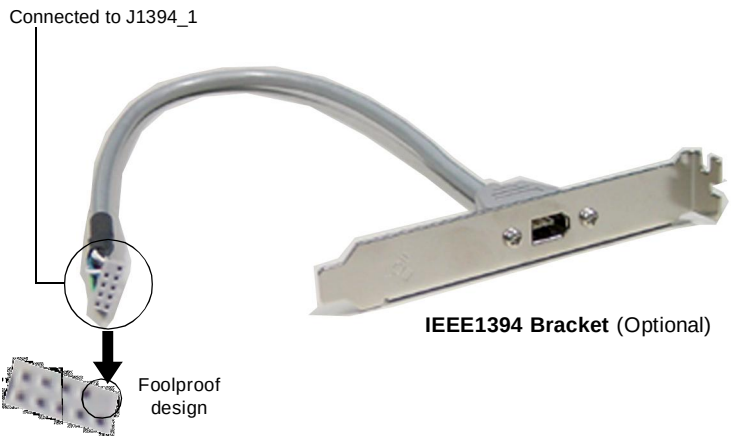
The mainboard provides two 1394 pin headers that allow you to connect optional IEEE 1394 port.

J1394_1

Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	TPA+	2	TPA-
3	Ground	4	Ground
5	TPB+	6	TPB-
7	Cable power	8	Cable power
9	Key (no pin)	10	Ground

How to attach the IEEE 1394 Port:



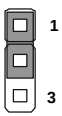
Jumpers

The motherboard provides the following jumpers for you to set the computer's function. This section will explain how to change your motherboard's function through the use of jumpers.

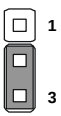
Clear CMOS Jumper: JBAT1

There is a CMOS RAM on board that has a power supply from external battery to keep the system configuration data. With the CMOS RAM, the system can automatically boot OS every time it is turned on. If you want to clear the system configuration, use the JBAT1 (Clear CMOS Jumper) to clear data. Follow the instructions below to clear the data:

JBAT1



Keep Data



Clear Data

MSI Reminds You...

You can clear CMOS by shorting 2-3 pin while the system is off. Then return to 1-2 pin position. Avoid clearing the CMOS while the system is on; it will damage the mainboard.

Clear BIOS Password Jumper: JPWD1

The jumper is used to clear the BIOS password. To clear the password, open the jumper and restart your computer.

JPWD1

Clear

Normal

Slots

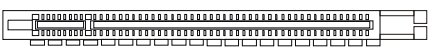
The mainboard provides one PCI Express x16 slot and three 32-bit PCI bus slots.

PCI Express Slots

The PCI Express slots, as a high-bandwidth, low pin count, serial, interconnect technology, support Intel highest performance desktop platforms utilizing the Intel Pentium 4 processor with HT Technology.

PCI Express architecture provides a high performance I/O infrastructure for Desktop Platforms with transfer rates starting at 2.5 Giga transfers per second over a PCI Express x1 lane for Gigabit Ethernet, TV Tuners, 1394 controllers, and general purpose I/O. Also, desktop platforms with PCI Express Architecture will be designed to deliver highest performance in video, graphics, multimedia and other sophisticated applications. Moreover, PCI Express architecture provides a high performance graphics infrastructure for Desktop Platforms doubling the capability of existing AGP 8x designs with transfer rates of 4.0 GB/s over a PCI Express x16 lane for graphics controllers.

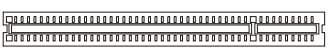
You can insert the expansion cards to meet your needs. When adding or removing expansion cards, make sure that you unplug the power supply first.



PCI Express slot

PCI (Peripheral Component Interconnect) Slots

The PCI slots allow you to insert the expansion cards to meet your needs. When adding or removing expansion cards, make sure that you unplug the power supply first. Meanwhile, read the documentation for the expansion card to make any necessary hardware or software settings for the expansion card, such as jumpers, switches or BIOS configuration.



PCI Slots

PCI Interrupt Request Routing

The IRQ, acronym of interrupt request line and pronounced I-R-Q, are hardware lines over which devices can send interrupt signals to the microprocessor. The PCI IRQ pins are typically connected to the PCI bus INT A# ~ INT D# pins as follows:

	Order 1	Order 2	Order 3	Order 4
PCI Slot 1	INT A#	INT B#	INT C#	INT D#
PCI Slot 2	INT B#	INT C#	INT D#	INT A#
PCI Slot 3	INT C#	INT D#	INT A#	INT B#